

EMPLOYABILITY OF LOCAL TRAINED SKILL LABOUR IN  
CONSTRUCTION INDUSTRY

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For my family and friends that always there for me whenever I needed them  
For those who helped and pray for my success, thank you. You know who you are.



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## ABSTRACT

Development in Malaysia is booming which can be witnessed by the various construction projects that currently in progress, especially in the state of Johor which has the highest value of construction work completed for the third quarter of 2016. This necessarily requires skilled labours in a high number especially among the locals since it has been reported that Malaysia's construction industry is having problems related to the shortage of local skilled labour. In addition, the local workers have been reported to unable to fulfil the demand of construction market and this have caused the contractor to import foreign workers to meet the needs and requirement of labour market in construction sector. The objectives of this study are to determine the criteria set by the construction company in recruiting local skilled labour and to study the strategies that can attract local skilled labour to join construction industry. Questionnaire has been distributed to G7 contractor in the state of Johor in order to achieve the objectives of this study. Collected data was then evaluated and tested for its reliability using the SPSS 20.0 software before it can be analysed in order to obtain the mean value, frequencies and percentage. The outcome of this study indicates that the prospective employer prefers to work with man and they require young, experienced, knowledgeable and skilled workers in doing the job. Most of the strategies that have been selected are mainly related to money namely salary increment, bonus, allowance and overtime payment, apart from upgrading labours welfare and providing a better accommodation. This study can be a guideline to both skills institution and contractor to improve on what they are lacking in order to encourage the local trained skills labour to join the industry.

## ABSTRAK

Pembangunan di Malaysia yang semakin pesat dapat disaksikan dengan perlbagai projek pembinaan yang sedang berjalan, terutamanya di negeri Johor yang mempunyai nilai kerja pembinaan siap tertinggi bagi suku ketiga 2016. Tenaga kerja yang ramai pastinya diperlukan terutamanya pekerja mahir tempatan, yang mana industri pembinaan negara dilaporkan mengalami masalah kekurangan pekerja mahir tempatan. Turut dilaporkan pekerja tempatan tidak mampu untuk memenuhi permintaan pasaran industri pembinaan menyebabkan kontraktor memilih untuk mengambil pekerja asing bagi memenuhi keperluan pasaran buruh industri pembinaan. Kajian ini dijalankan bagi menentukan kriteria-kriteria yang dicari oleh syarikat kontraktor dalam menggaji pekerja mahir tempatan dan mengkaji strategi yang boleh dilaksanakan untuk menarik minat pekerja mahir tempatan menceburi industri binaan. Kertas soal selidik telah diedarkan kepada kontraktor G7 dalam negeri Johor bagi mencapai objektif kajian. Data yang diperoleh kemudiannya dinilai dan diuji kebolehgunaannya menggunakan perisian SPSS 20.0 sebelum dianalisis untuk mendapatkan nilai min, kekerapan dan peratusan. Hasil daripada kajian ini menunjukkan bakal majikan lebih memerlukan lelaki muda, berpengalaman, berpengetahuan dan berkemahiran untuk melakukan sesuatu kerja. Strategi yang dipilih pula kebanyakannya menjurus ke arah soal kewangan iaitu kenaikan gaji, pemberian bonus, bayaran elaun dan kerja lebih masa, di samping menaikkan kebajikan pekerja dan menyediakan kemudahan tempat tinggal yang selesa. Kajian ini boleh digunakan sebagai panduan kepada institusi kemahiran dan pihak kontraktor untuk menambahbaik kekurangan mereka dalam usaha menggalakkan penyertaan tenaga kerja mahir tempatan di industri pembinaan Malaysia

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PTTA UTHM  
PERPUSTAKAAN TUNKU TUN AMINAH

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

Construction is a very important industry in Malaysia and plays a vital role in providing a source of employment and career opportunities to the community. The industry is made up of many components including contractors, labours, developers, client organisations (government or private), management, engineering, architectural, and surveying consultants, manufacturers, material suppliers, and plant hirers (Mustafa Kamal, 2012). All these components have a significant role in the growth and development of Malaysian construction industry. After independence on year 1957, the Malaysian construction industry has developed from a low-tech, labour intensive, craft-based industry to one that has a capacity to deliver advanced buildings and infrastructure, using highly mechanized production techniques (Kamal and Flanagan, 2012).

Skill is defined as the ability to carry out the tasks and duties of a given job. Skilled labor refers to labor that requires workers who have specialized training or a learned skill-set to perform the work. These workers can have varied levels of training or education, while an unskilled labor does not require workers to have special training or skills. The rapid expansion of the construction industry causes high demands to the construction workforce.

Construction industry in Malaysia still practicing the labour-intensive approach as the method of construction, since source for the inexpensive labour from

nearby countries such as Indonesia is available. Lack of opportunities for training and skill formation contribute to the unattractiveness of a career in construction. In both developed and developing countries are having difficulties in recruiting an experienced and young, educated workers. The inability of the industry to attract workers and investing to train them has serious repercussions for the productivity and quality of construction products (ILO, 2001). This has resulted in a wide gap between demand for non-skilled labour and skilled labour. Certainly, these high demands cannot be fulfilled by the local workforce and it is the reason why employers prefer to hire foreign labours and their influx are visible in this country nowadays (Abdul Hamid et al, 2011).

## **1.2 Background of research**

In order to perform construction projects, labours are one of the essential key factors for a successful construction project management. Construction industry is one of the industries that are labour intensive due to a lot of task need to be done manually on site. From mixing the concrete, bricklaying, plastering, plumbing work, managing the materials on site, installing scaffoldings and the lists goes on. The Malaysian construction industry has been experiencing a critical shortage of workforce since decades ago. Nowadays, the local workers unable to fulfill the demand of construction market and this has caused the contractor to import foreign workers from outside to meet the needs and requirement labor market in construction sector (Abdul Hamid et. al, 2013).

Demand for skilled labours, especially in the technical sector continues to be critical even though the country has a high number of labour forces of young, well-educated, and also a low unemployment rate (Devadoss, 2012). Poor market conditions and the uncertainty of global economy is also a factor companies hire skilled labours as the company focused on the development of human resources and retain skilled labours (Sinar Harian, 2013).

Through a statement released by Masters Builder Associations Malaysia (MBAM) in year 2012, the construction industry faces a shortage of labours and has caused companies to compete for a limited number of skilled labours in executing projects of the 10th Malaysia Plan and the Economic Transformation Programme

(ETP). Sooi (2007) reports that the construction industry in Malaysia is grappling with unfilled positions in the skilled workforce sector, that he suggests an immediate solution would be importation of right talents from abroad (foreign labour). Matthew Tee, the president of MBAM has been quoted saying; one of the challenges that the industry is facing now is the need to provide adequate skilled construction labours. “While there is a need to limit the number of foreign labours, we also need to have the number of local skilled construction labours who can contribute to the economy, as the construction industry plays an important role in Malaysian economic growth” (Utusan Malaysia, 2013).

Malaysia requires about 50 per cents of skilled labours in technical fields by 2020 to compensate for the influx of the present migrant labours. Director General of the Manpower Department said that they are one of the agencies under the Ministry of Human Resources that has been assigned the task to produce a skilled workforce to meet the industry needs (Utusan Malaysia, 2014).

Numerous of construction project have been failed and unsuccessful due to the labour factor. Windapo (2016) emphasizes where projects failures happen due to insufficient number of skillful labour or qualified tradesmen. Concern regarding the shortage of skilled labour issue that is not enough to fill in the vacancies in construction industry has been hovering around for decades now (Abdul Aziz, 2002). Even some organizations that already aware about the issue thought it is challenging for the construction industry to attract and retain relevant skilled labour (Ahmad Zaki, 2012). Moreover, experienced labours are aging and their tacit knowledge embedded in them, another scenario that other countries are going through such as United Kingdom, United States, Bahamas, India and others.

The level of supply of skilled tradesmen is attributed to the lack of high-quality basic education, the state of the economy, compulsory certification of worker and an ageing workforce (Mohd Rahim et. al, 2016). Besides, Windapo (2016) also stated that there is a significant relationship between skilled labour shortages and the requirement that labour be certified, resulting unsatisfactory output when there is no certification requirement.

Employee’s recruitment and selection is a very important factor to ensure the successful management of human resources in an organization. The main purpose of recruitment and selection of employees is to pick the right person for the right job (Makhbul & Hasun, 2007). Without a good recruitment and selection strategy, it will

give negative effects to the organization. Huselid (1994) and Stewart & Knowles (2000) pointed out that the practice of recruitment and selection of workers will affect the performance of the organization as a whole. This defined that selection was heavily influenced by recruitment strategies used. By implementing a good strategy may attract as many candidates to apply for the position and employee selection can be done more effectively (Makhbul & Hasun, 2007).

### 1.3 Problem statements

Malaysia is having an issue of local labours shortage in construction industry. In October 2012, the former Deputy Prime Minister of Malaysia has been quoted as saying that Malaysia should reduce its dependency on foreign labour (Utusan Malaysia, 2012). A study has shown that the foreign labour has occupied most of the work position in construction project. Roughly, the composition of labour in one construction project were 82.77% foreign labour mostly from Indonesia and only 17.23% were local labours which is less than one fifth of the total number of labour in the construction project (Abdul Hamid, 2013)

Figure 1.1 shows the regional skilled labour shortage on year 2012 done by an international accounting firm named Grant Thornton International. Issues with shortage of skilled labours have gone globally with ASEAN region tops the chart. A study by The Grant Thornton International Business Report (IBR) had revealed that 62% of businesses in Malaysia are finding it hard to source skilled workers (Figure 1.2), with one per cent more compared to Singapore (61%). However, both countries were well above the global average of 39%. The survey has also revealed that in the ASEAN region, the shortage of specific or technical skills is the most significant factor for businesses in Vietnam (86%), followed by Philippines (76%) and thirdly in Malaysia at (68%). This is closely followed by Singapore (66%) and also business owners globally (64%).

Malaysia's goal to be a developed country by 2020 may not come true as only 23 per cent of skill labours were recorded on 2011. As the government is targeting on achieving 37 per cent skilled labours by 2015, Malaysia may need to revise their target and strategy in order to reach the goal to become developed



country by 2020 (Nadaraj, 2013). However, to date only 28 per cent of skill labours were recorded for year 2016 (Bernama, 2016).

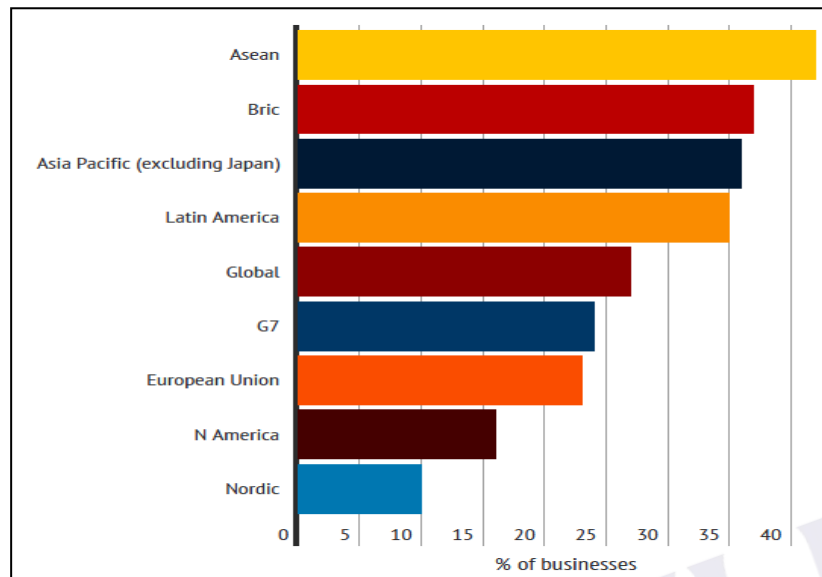


Figure 1.1: Skilled labour shortage issue in worldwide  
(Grant Thornton IBR, 2012)

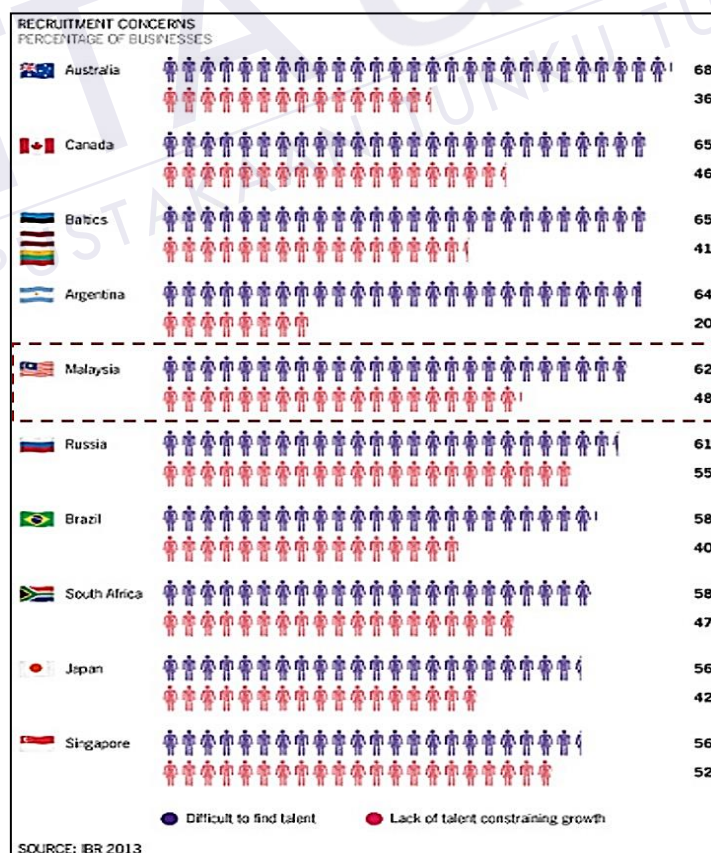


Figure 1.2: Skills Recruitment Concerns

Malaysia's ability to provide skilled labour at a rate of 50 per cent of all labours is a barometer of whether we really deserve to be recognized as a developed country by year 2020. Currently, highly skilled workforce in Malaysia is only 28 per cent and the fact that almost 70 per cent of labours in Malaysia are in the unskilled category (MBM, 2014) should be taken seriously because it gives a great impact on the human capital needs, economic development, social welfare and political patterns Malaysia in the future (Ministry of Human Resources Malaysia, 2013).

Although the skills training institute by both public and private, have drawn up their own strategies to ensure they produce a skilled workforce as required by the industry, they still need to take into consideration the industry player's point of view. A contractor is anyone who directly employs or engages construction workers or manages construction work. The opinion of construction industry players mainly the contractor requirements in hiring skills labour need to take into account as they are the future employer that will employ all these skills trainers.

According to the Real Estate and Housing Developers Association Malaysia (REHDA), the construction industry has been experiencing critical skilled-labours shortage issue and it is indirectly affect the property sector as quality of product including housing and building are related directly to manpower and skilled. It seems that the construction workers is failed to attract workers in skilled and semi-skilled trades. Moreover, the 3D perception has discouraged skilled local workers in joining, resulting in a lot of job being executed by the untrained construction workers (Abdul Hamid et.al, 2013).

Working in construction sector requires a lot of physical work in uncomfortable surrounding, which causes the locals to avoid and not attracted to this kind of work compared to manufacturing sector that offers comfortable conditions and easier works (Ahmad Zaki, 2012). High demand on foreign labour happens because local people decline to work as a result of low salary offered and lack of skills, practices and passions (Willis, 1974). Young generation today has a completely different view of the workplace and of the work experience. New recruitment strategies need to be address, as examples appointing a talent director, identifying where is best to find recruits, setting standards for evaluating candidates, doing a thorough interview-evaluation process, providing job preview to avoid young candidates from become disenfranchised if the job turns out to be different from their

expectations, and understanding the importance of social media as a recruitment tool (Johnson, 2013).

#### **1.4 Research questions**

From the main issue about the low number of local skills in the construction industry, two research questions have been generate about the employability of these local trained skill labour in joining the construction industry, which are:

- i. What are the criteria set by the construction company when recruiting local trained skill labour?
- ii. How the industry players can attract the locals to join the construction industry?

#### **1.5 Research objectives**

The aim of this study is to investigate the criteria from employer perspective in recruiting the local trained skill labour to work in the construction industry and how the best strategies deem effective to be implement in order to increase their participation rate. To achieve this aims, two objectives are being delineated. Those are as follows:

- i. To determine the criteria set by the construction company in recruiting local trained skill labour.
- ii. To study the strategies that can attract local trained skill labour to join construction industry

## 1.6 Research scope

This research will focus on the state of Johor where various development and construction activities are currently on-going. As shown in Figure 1.3, Johor recorded the highest value of construction work done of RM7.1 billion or 22.3 per cent share among the states. Quantitative method by distribution of questionnaire was chosen as the data collection method to help obtain data. Target respondents are the construction industry players, mainly Grade 7 (G7) contractors registered with the Construction Industry Development Board (CIDB). Contractor G7 was chosen because they are the main contractor with unlimited tendering abilities as shown in Table 1.1.

A total of 418 G7 contractors in Johor were registered with the CIDB, which making the number of respondents required is 300 respondents with a confidence level of 95% that the sample will reflect the total population and margin of error of 3% that the answer will gave a true value to this study.

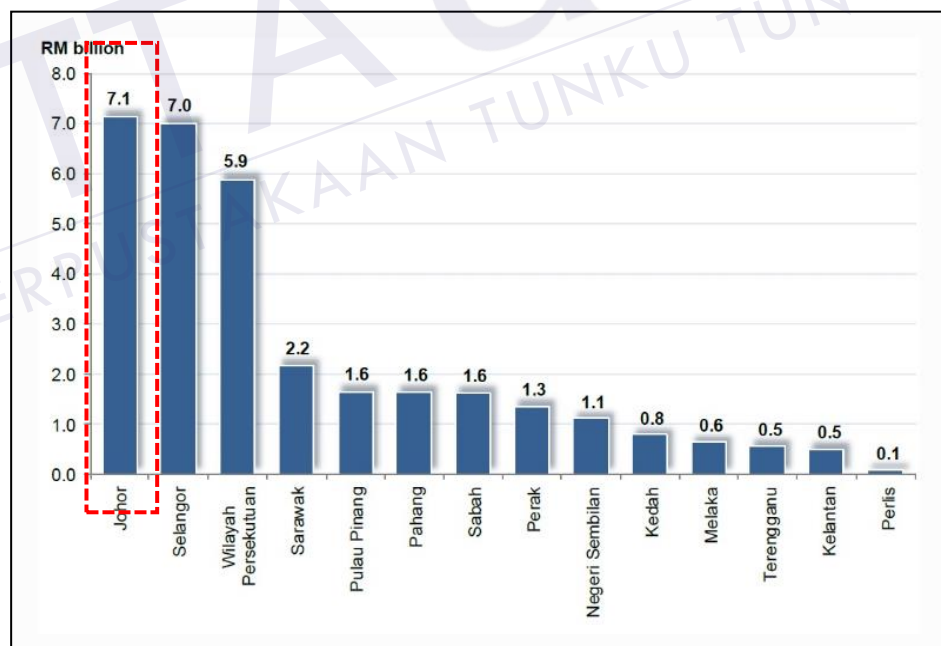


Figure 1.3: Value of construction work done by location of project for Q3 2016 (Department of Statistics Malaysia, 2016)

Table 1.1: CIDB registration requirement and procedure.  
(CIDB Malaysia, 2016)

Grade	Tendering Capacity (RM)	Paid Up Capital / Net Capital Worth (RM)
<b>G7</b>	Unlimited	750,000.00
<b>G6</b>	Not exceeding 10 mil	500,000.00
<b>G5</b>	Not exceeding 5 mil	250,000.00
<b>G4</b>	Not exceeding 3 mil	150,000.00
<b>G3</b>	Not exceeding 1 mil	50,000.00
<b>G2</b>	Not exceeding 500,000.00	25,000.00
<b>G1</b>	Not exceeding 200,000.00	5,000.00

### 1.7 Significance of research

Government is optimistic in its attempt to produce a total of 300,000 skilled labours per year in various sectors in order to realize the vision of Malaysia to become a developed high income nation by 2020 by ensuring that the country has 50 per cent of skilled labour. With various construction projects that are currently on going around Johor region, the demand for local skilled worker in construction industry can be identified through this study. Therefore, by knowing the demand of local skilled worker in the industry, contractor's requirement and criteria as a prospective employer in hiring local skilled worker can be determined. In addition, this research will also identify some strategies on how to attract the local skilled labour to join the construction industry in order to reduce the dependency on foreign unskilled labour. This research will benefit the training institute especially future graduates as an early preparation before entering the real construction world.

### 1.8 Summary

This study provides some valuable insights on the issue of skills labour shortage and its demand in industry, and what have been refraining the skilled labour from joining

the construction industry. In this chapter, the introduction of the research will explain about the fact and issues in the industry, followed by research background, statement of problems, objectives of the study, the scope and justification of the study.



## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

The Malaysian construction industry is among the most important industries in the country that closely related to other economic sectors (Abdul Rahim, 2013). Construction also is among the sectors which rely heavily on foreign labours owing to a confluence of factors; Malaysian youth's aversion to low status work, an expanding manufacturing sector which is offering much better employment conditions, labour attrition, wide opportunities for tertiary education, lower birth rate and emigration of Malaysian labours to high-wage countries (Abdul Aziz, 1995)

According to Ministry of Home Affairs, most of the foreign labours in Malaysia are semi-skilled and unskilled labours dominating the manufacturing, agriculture, construction and services industry, and their numbers are increasing (Berita Harian Online, 2016). The presence of many unskilled labours today may threaten our nation's goal of being an industrialized country by 2020 and keeps the country on a low-skill and low-tech trajectory (Migration Issue, 1995).

Government of Malaysia is optimistic in achieving their target of producing 300 thousand skilled labours in various sectors in a year. Minister of Human Resources has quoted saying that until to date (2016), the country has only 28 per cent of skilled labours in key sectors throughout the country and the efforts deployed to achieve 50 per cent of skilled worker by 2020 to achieve the developed nation with high income status (Bernama, 2013).



Despite the economic growth and constantly increase demand for skilled and trained labours by the industry, the number of skilled labours in Malaysia is still low compared to other developed countries such as Finland (58%), Singapore (52%) and Germany (80%) (Bernama, 2013)

## **2.2 Classification of labours and skills**

Generally, labours in the construction industry can be divided into three categories which are the general labour, semi-skilled labour and skilled labour.

### **2.2.1 General labour**

General labour is a group that does not have neither skills nor expertise to do the work and consists of those who just started working and act as an assistant to a skilled and semi-skilled labour in doing construction work. Their task is to carry out basic work such as bringing construction materials to a place, clear excess building materials, clean up the site office and other tasks that will be directed. It is easier to get a supply of general labour compared to skilled labours and semi-skilled labours because of their low wage. However, this group still have the opportunity to improve their status by obtaining the skills acquired through the long working experiences (Mohd Yusof, 2004)

### **2.2.2 Semi-skilled labour**

Semi-skilled labours have skills in one or more trades but did not reach the required skill level to be a skilled worker. They normally work together with a skilled labour in the construction sites. Even though the semi-skilled has the required skills, the skilled labour is the people that decide and determine how the work goes. Normally semi-skilled labour is made up of the trainees from the skills institute who have just completed their apprentice period as their working experience is less than 3 years (Mohd Yusof, 2004).



## REFERENCES

- Abd. Karib, S., Shaffii, N., Che Soh, C. S. & Zainol Abidin, N. I., (2014). *Meeting Construction Industry Resources Requirements: The Malaysia Way*, 20th AsiaConstruct Conference Hong Kong (13 & 14 November 2014)
- Abd. Majid, M.Z. & Ronald McCaffer, (1997). .Factors of Non Excusable Delays That Influence Contractor.s Performance. *Journal of Construction Engineering and Management*, ASCE
- Abdul Aziz, A. R. (1995). Foreign labour in the Malaysian Construction Industry. *Sectoral Activities Programme*, Working Paper No. 95. Geneva, ILO.
- Abdul Aziz, A. R. (2002). *Skill shortages in the construction sector: A critical survey of existing formal vocational training systems*. School of Housing Building and Planning, Universiti Sains Malaysia
- Abdul Hamid, A.R., Jagar Singh, B.S.B. & Mazlan M.S., (2013). *The Construction Labour Shortage in Johor Bahru, Malaysia*. *International Journal of Research in Engineering and Technology*, Vol. 02 Issue 10, pp. 508 – 512.
- Abdul Hamid, A.R., Singh, B., Md. Yusof, A. M. & Abdullah, N.A., (2011). *The Employment of Foreign Labours at Construction Sites*. 2<sup>nd</sup> International Conference on Construction and Project Management IPEDR Vol. 15, pp. 126 – 130.
- Abdul Majid, M, Mohammad Yusoff, W. F. & Sopian, A. R. (2015). *Women as Skilled Labour in the Construction Industry of Malaysia: Potential and Constraints*. *International Conference on Social Science Research*, ICSSR 2015.
- Abdul Razak, B. I., Matthew, H. R., Ahmed, Z., & Ghaffar, I. (2010). *An Investigation of The Status Of The Malaysian Construction Industry*, Benchmarking: An International Journal, 17(2), 294-308.
- Abdullah, J. I. L (2013, December 10). JTM Komited Lahirkan Graduan Kompetitif dan Tenaga Kerja Mahir. *Bernama*.

- Abdullah, Z. (2010). *Pembentukan Profil Komuniti Pembelajaran Profesional Sekolah Menengah Di Malaysia*. Tesis Master yang tidak diterbitkan. Institut Pengajian Kependidikan, Universiti Malaya.
- Ahmad Zaki, S., Mohamed, S. F. & Mohd Yusof, Z. (2012), *Construction Skilled Labour Shortage – The Challenges in Malaysian Construction Sector*. Ontario International Development Agency (OIDA) International Journal of Sustainable Development 04: 05, pp. 99 – 108
- Ahmad Zaki, S., Mohamed, S. F. & Mohd Yusof, Z. (2012). *Attracting and retaining skilled construction workforce in Malaysian construction firms*. Conference paper. Universiti Teknologi Malaysia, February 2012.
- Ahmad, A.F., (2015, 1 June). Manfaatkan Teknologi IBS: Pendekatan Yang Semakin Popular Dalam Pembinaan Bangunan. *Utusan Online*. Retrieved November 27, 2015 from <http://www.utusan.com.my/sains-teknologi/teknologi/manfaatkan-teknologi-ibs-1.98066>
- Ahmed, A. & Menon, S, (2017, August 20) Conditions at Dubai labour accommodations to be improved, Gulf News, retrieved on 12 November 2016 at <http://gulfnews.com/business/sectors/employment/conditions-at-dubai-labour-accommodations-to-be-improved-1.196307>
- Ahn, Y. H., Kwon, H., Pearce, A. R. & Shin, H. (2010). *Key Competencies for U.S. Construction Graduates: An Exploratory Factor Analysis*.
- Ahuja, V., & Kumari, S. (2012). *Issues and Challenges for Women in Construction Industry* :, (October), 12–13.
- Ali, A.S & Wen, K.H., (2011) *Building Defects: Possible Soution for Poor Construction Workmanship*. Journal of Building performance, Volume 2, Issue 1, 2011,
- Alnaqbi, W. (2011). *The relationship between human resource practices and employee retention in public organisations: an exploratory study conducted in the United Arab Emirates*. Retrieved on December 25, 2016 from <http://ro.ecu.edu.au/theses/424>
- Arkkelin, D. (2014) *Using SPSS to Understand Research and Data Analysis*. Psychology Curricular Materials. Book 1.
- Arthur, J. (1994). *Effects of human resource systems on manufacturing performance and turnover*. Academy of Management Journal, 37(3), 670-687.

- Atalah, A. (2013) *Comparison of Personality Traits among Estimators, Project Managers, and the Population*. Construction Management Faculty Publications. Paper 5. [http://scholarworks.bgsu.edu/construct\\_mgt\\_pub/5](http://scholarworks.bgsu.edu/construct_mgt_pub/5)
- Avolio, B. J. & Barrett, G. V (1987). Effects of age stereotyping in a simulated interview. *Psychology and Aging*. Vol 2(1), pp. 56-63. <http://dx.doi.org/10.1037/0882-7974.2.1.56>
- Badger, W. W., Walsh, K., and Mayo, R. (2005). *Leadership and Goal-Setting in Construction Education*. Proceedings of Construction Research Congress, San Diego, CA.
- Bajet 2016 Pacu Perkembangan IBS (2015). *Harian Metro*. Retrieved October 28, 2015 from <http://www.hmetro.com.my/node/88410>
- Banerjee, A., & Chaudhury, S. (2010). *Statistics without tears: Populations and samples*. *Industrial Psychiatry Journal*, 19(1), 60–65. <http://doi.org/10.4103/0972-6748.77642>
- Barker, H. & Ingram, H. (2011). *Addressing scarce construction skills for competitive advantage: a case study*. *Training & Management Development Methods* 25 (4): 549-559. doi: 10.1108/09513501111155453.
- Beattie, J. C. (1991). *Prohibiting marital status discrimination: A proposal for the protection of unmarried couples*. *Hastings Law Journal*, Issue 42, pp: 1415–1453.
- Berik, G., & Bilginsoy, C. (2006). Still a Wedge in the Door: Women Training for the Construction Trades in the USA. *International Journal of Manpower*, 27(4), 321–341. doi:10.1108/01437720610679197
- Bernama (2015, Jun 29). 7 Juta Pekerja Asing Di Malaysia: MTUC Gesa Kerajaan Bekukan Pengambilan Pekerja Asing, *Utusan Online*. Retrieved on 12 December 2015 from <http://www.utusan.com.my/berita/nasional/7jutapekerjaasingdimalaysia1.108348>
- Bernama, (2016, August 8), Hanya 28 Peratus Rakyat Malaysia Terdiri Tenaga Kerja Berkemahiran Tinggi
- Bernama, (2016, Oktober 7), Tenaga Kerja Asing Tidak Berkemahiran Penuhi Industri Binaan Yang Semakin Rancak

- Bilbo, D., Fernandez-Solis, J. L., Bohne, N. & Waseem, M. (2009). *The Impacts of Undergraduate Construction Internships on Recruitment, Training, and Retention of Entry-Level Employees of the Construction Industry*
- Briscoe, G., Andrew, R., Dainty, J., & Millett, S. (2001). *Construction supply chain partnerships: skills, knowledge and attitudinal requirements*. European Journal of Purchasing & Supply Management 7 (4): 243-255. doi: 10.1016/S0969-7012(01)00005-3.
- Brown, J. D. (2011). *Likert Items and scales of measurement?* SHIKEN: JALT Testing & Evaluation SIG Newsletter, 15(1), pp: 10-14
- Buck, J., & Watson, J. (2002). *Retaining staff employees: The relationship between human resources management strategies and organizational commitment*. Innovative Higher Education, 26(3), 175-193.
- Budhwar, P., & Mellahi, K. (2007). *Introduction: Human resource management in the Middle East*. The International Journal of Human Resource Management, 18(1), 2-10.
- Burati, J., Matthews, M., & Kalidindi, S. (1991). *Quality management in construction industry.*" *Journal of Construction Engineering and Management*. 117 (2): pp. 341 - 359. doi: 10.1061/(ASCE)07339364(1991)117:2(341).
- Busseri, M. A., & Palmer, J. M. (2000). *Improving teamwork: the effect of self-assessment on construction design teams*. Design Studies, 21(223-238).
- Carr, P. (2000). *An investigation of the relationship between personality traits and performance of engineering and architectural professionals providing design services in the construction industry* - PhD dissertation. Blacksburg, Virginia: Virginia Polytechnic Institute and State University.
- Chan, P. W., & Dainty, A. R. J. (2007). Resolving the UK construction skills crisis: a critical perspective on the research and policy agenda. *Construction Management and Economics*, 25(4), 375–386. doi:10.1080/01446190600863152
- Chung, J., Park, J., Cho, M., Park, Y., Kim, D. J., Yang, D. & Yang, Y. (2015). *A study on the relationships between age, work experience, cognition, and work ability in older employees working in heavy industry*. Journal of Physical Therapy Science, Issue 27, pp. 155 – 157.

- CIDB (2015). *Definition of Skilled Labour and Semi-skilled Labour According to CIDB*, Retrieved on November 27, 2015 from [http://www.cidb.gov.my/cidbv4/index.php?option=com\\_faqbook&view=category&id=70&Itemid=489&lang=en](http://www.cidb.gov.my/cidbv4/index.php?option=com_faqbook&view=category&id=70&Itemid=489&lang=en)
- Cotton, A. P., Sohail, M., & Scott, R. E. (2005). Towards improved labour standards for construction of minor works in low income countries. *Engineering, Construction and Architectural Management*, 12 (6), pp. 617 – 632. doi: 10.1108/09600080510634164
- Dainty, A. R. ., Bagilhole, B. M., & Neale, R. H. (1999). Women's careers in large construction companies: expectations unfulfilled? *International Career Development*, 4(7), 353–357.
- Dainty, Andrew R.J., Stephen, G. I. & David, S. R. (2004). *Bridging the skills gap: a regionally driven strategy for resolving the construction labour market crisis*. *Engineering, Construction and Architectural Management*. doi: 10.1108/09699980410547621.
- De Grip, A. & Zwick, T., (2004). *The Employability of Low-Skilled Workers In The Knowledge Economy*
- Debrah, M., & Budhwar, P. (2004). *Human resource management in developing countries*. London: Routledge.
- Detsimas, N., Coffey, V., Sadiqi, Z., & Li, M. (2016). *Workplace training and generic and technical skill development in the Australian construction industry*. *Journal of Management Development*, issue 35(4), pp. 486-504. <http://doi.org/10.1108/JMD-05-2015-0073>
- Devadoss, A. R. (2012). *Labour and Employment: Do Existing Statistics Facilitate Planning Of Human Capital for Economic Transformation*
- Economic Planning Unit (2015), *Eleventh Malaysia Plan - Strategy Paper 8: Labour Market for an Advanced*, Putrajaya: Prime Minister's Department
- Edmondson, G., Valigra, L., Kenward, M., Hudson R. L., & Belfield, H. (2012). *Making Industry-University Partnerships Work: Lessons from Successful Collaborations*. The Science|Business Innovation Board AISBL.
- Edum-Fotwe, F. T. & McCaffer, R. (2000). *Developing project management competency: perspectives from the construction industry*. *International Journal of Project Management* 18 (2): 111-124. doi:10.1016/S0263-7863(98)90075-8.



- Eriksson, T. (2011). *Reward Systems and Incentives in a Project Based Organisation: Identification of Reward Systems and Incentives influencing Construction Site Managers*. Master of Science Thesis in the Master's Programme International Project Management, Chalmers University of Technology, Sweden.
- Fair Work Ombudsman Australian Government (2016). *Pay guide – Building and Construction General On-site Award 2010*.
- Fincham, J. E. (2008). Response Rates and Responsiveness for Surveys, Standards, and the Journal. *American Journal of Pharmaceutical Education*, 72(2), 43.
- Franz, J. M. (2008). *A pedagogical model of higher education/industry engagement for enhancing employability and professional practice*. Proceedings Work Integrated Learning (WIL): Transforming futures, practice pedagogy partnerships (pp. 164-288), Manly, Sydney.
- Gaedeke R. M., & Tootelian, D. H. (1989). *Employers rate enthusiasm and communication as top job skills*. *Marketing News* 23(7), 14.
- Gann, D. & Senker P., (1998). *Construction Skills Training For the Next Millennium, in Construction Management and Economics*, London, E & FN Spon, 16, pp. 569-580.
- Gatewood, R., & H. Field (2001). *Human resource selection - fifth edition*. Mason, OH: South- 319 Western, 2001.
- Gay, L. R., & Diehl, P. L. (1997). *Research Methods for Business and Management*. Published by Macmillan Publishing Company, New York.
- Geneva, (2001). *The Construction Industry In The Twentyfirst Century: Its Image, Employment Prospects And Skill Requirements*.
- Gliem, J. A. & Gliem R. R. (2003) *Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales*. Paper presented at the Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education, The Ohio State University, Columbus, OH, October 8-10, 2003.
- Gonzales, D. (2013). *Workforce trends in the construction industry*. Zurich American Insurance Corporation, Illinois.
- Green, F., D. Ashton, B. Burchell, B. Davies & A. Felstead (2000). *Are British Workers Becoming More Skilled?*, in: Borghans, L. & A. de Grip (eds.), *The*

- Overeducated Worker? The Economics of Skill Utilization, Cheltenham: Edward Elgar, 77-106.
- Greenan J.P., Wu M., Mustapha, M. & Ncube, L. (1998) *Attitudes and motivations of vocational teachers regarding program improvement*. Journal of Industrial Teacher Education 35 (3), pp. 6-23.
- Gurjao, S. (2006). *Inclusivity : the Changing Role of Women in the Construction* (pp. 1–38). Reading.
- Haack, P. A. (2006). *Special mentoring series: Mentoring and professional development programs: Possibilities and pitfalls*. Music Educators Journal 92 (4): pp. 60-64., doi: 10.2307/3401114.
- Haas, C. T., Borcharding, J. D., Glover, R. W., Tucker, R. L., Alemany, C. & Fagerlund, W. R. (2000). *The Effects of Computers on Construction Foremen*. Center for Construction Industry Studies, the University of Texas, Austin. March, 2000.
- Han, S. S., Park, S. H., Jin, E. J., Kim H., & Seong, Y. K., (2008). *Critical Issues and Possible Solutions for Motivating Foreign Construction Workers*. Journal of Management in Engineering. Vol. 24, Issue 4, October 2008.
- Harcourt, S., & Harcourt, M. (2002). *Do employers comply with the civil/human rights legislation? New evidence from New Zealand job application forms*. Journal of Business Ethics, Issue 35, pp: 205–221. doi:10.1023/A:1013822125613
- Hassan, M.R. (2013), *Agenda Melayu: Belia Berkemahiran Perlu Di Arusperdanakan, Kekurangan Bakat Belia Berkemahiran Menjelang Tahun 2020*
- Hoover, S., Wilson, K. & Powers, T. (2015). *Talent Development in the Construction Industry: 2015 FMI Industry Survey*. FMI Corporation.
- Huselid, M. A., (1994). *Documenting HR's effect on company performance*. HR Magazine, 39, 79-85.
- ILMIA (2016). *Institute of Labour Market Information and Analysis* retrieved on November 10, 2016 from [www.ilmia.gov.my](http://www.ilmia.gov.my)
- International Finance Corporation – IFC (2009). *Workers' accommodation: processes and standards*. Public guidance note by IFC and the EBRD
- International Labour Office (ILO) (1995). *Safety, health and welfare on construction sites: A training manual*. Geneva, International Labour Office. /Trainers

- manual, Occupational safety, Occupational health, Construction industry. ISBN 92-2-109182-1
- Ismail, M. H. (2012). *Kajian mengenai kebolehpasaran siswazah di Malaysia: Tinjauan dari perspektif majikan*. Prosiding PERKEM VII, Volume 2, pp. 906 – 913. ISSN: 2231-962X.
- Jain, V. & Mohan, S. (2015). *The Affordable Care Act ad Its Impact on Worker's Compensation*. Cognizant 20-2-Insight.
- Johnson, M. L. (2013). *Attracting young people into construction field positions*. Foundation Research Series for the Foundation of Wall and Ceiling Industry.
- Jorge, A. C., Richard, L. T., & Carl, T. H. (2005). *Worker's Skills and Receptiveness to Operate under the Tier Ii Construction Management Strategy*. Journal of Construction Engineering and Management, 131(7), 799-807.
- Kamal, E. M. & R. Flanagan (2012). *Understanding Absorptive Capacity in Malaysian Small and Medium Sized (SME) Construction Companies*. Journal of Engineering, Design and Technology 10(2), pp. 180-198.
- Kasun, N. H., & Janaka, Y. R. (2006). *Carpentry Workers Issues And Efficiencies Related To Construction Productivity In Commercial Construction Projects In Alberta*. Canadian Journal of Civil Engineering, 33, 1075- 1089.
- Kerajaan Kena Rangka Pelan Jangka Masa Panjang. (2015). *Sinar Harian Online*. Retrieved on October 26, 2015 from <http://www.sinarharian.com.my/mobile/nasional/kerajaan-kena-rangka-pelan-jangka-masa-panjang-1.407294>
- Kerr, J. and Slocum, W. (2005): *Managing corporate culture through reward systems*. Academy of Management Executive, Vol. 19, No. 4, pp. 130-138.
- Kirschenbaum, A., & Mano-Negrin, R. (1999). *Underlying labor market dimensions of 'opportunities': The case of employee turnover*. Human Relations, 52(10), pp. 1233-1255.
- Klosters D., (2014). *Matching Skills and Labour Market Needs: Building Social Partnerships for Better Skills and Better Jobs*, World Economic Forum Global Agenda Council on Employment, 22-25 January 2014, Switzerland
- Knesl, R., DiFonzo, S. & Warner, P. E. (2013). *Incentive Compensation Effectiveness Study: The 2013 U.S. Construction Industry Incentive Compensation Survey*. FMI Corporation.



- Kulkarni, G. K. (2007). *Construction industry: More needs to be done*; Editorial, Indian Journal of Occupational and Environment Medicine, 11(1), pp. 1-2.
- Kumar, D. M. & Abdullah, O. Y. (2013). *Inimitable Issues of Construction Workers: Case Study*. British Journal of Economics, Finance and Management Sciences. Vol. 7 (2), pp. 42 – 53.
- Kutscher, R. (1990). *The major trends*. Occupational Outlook Quarterly 34 (1), pp. 2-7.
- LaCerte, S. (2006). *Subject: Wages, salaries, and employee compensation*. Ithaca, NY: Cornell University, School of Industrial and Labor Relations, M. P. Catherwood Library. <http://digitalcommons.ilr.cornell.edu/ilrtheses/42>
- Lankard, B. A. (1990). *Employability—the fifth basic skills*. ERIC Digest No.104. Columbus Ohio: ERIC Clearinghouse on Adult, Career and Vocational Education. ED 325659
- Lankard, B. A. (1994). *Employers' expectations of vocational education*. Columbus, OH: The National Center for Research in Vocational Education, the Ohio State University. (ERIC Document Reproduction Service No. ED 376 273).
- Laroche, L., & Rutherford, D. (2007). *Recruiting, retaining, and promoting culturally different employees*. Oxford: Butterworth Heinemann publication.
- Lauermann, J. (2006). *Earnings Differentials by Industry: Testing the Theory of Compensating Wage Differentials*. Journal of Undergraduate Research IX.
- Lawler, E. (1995): *The New Pay: A Strategic Approach*. *Compensation and Benefits Review*, Vol. 27, No. 4, pp. 14-22.
- London Hazards Centre, *Health Risks Associated with Construction Work*
- Majikan Syarikat di Johor Digalak Beri Gaji Setimpal Ikut Kemahiran Pekerja, (2016, Oktober 12). *Berita Astro Awani*
- Makhbul, Z. M. & Hasun, F. M. (2007). *Amalan pengambilan dan pemilihan pekerja: Tinjauan ke atas firma terpilih di sektor perkilangan*. International Journal of Management Studies. Vol. 14(2), pp. 143-162.
- Malaysia Kritikal Lahirkan Tenaga Mahir? (2014), *Dewan Ekonomi, Dewan Bahasa dan Pustaka*. Retrieved November 18, 2015 from <http://dwnekonomi.dbp.my/wordpress/?p=707>
- Malaysia Statistic Department (2016). *Siaran Akhbar: Statistik Utama Tenaga Buruh di Malaysia – Ogos 2016*. Jabatan Perangkaan Malaysia.

- Manpower Department (2015). *Pelan Strategik Jabatan Tenaga Manusia (JTM) 2016-2020*. Putrajaya: Ministry of Human Resources
- Marshall, J. A. (1999). *Professional internships as a requirement for graduation*. Journal of Industrial Technology, 15, 2-8.
- Marshall, Ray and Marc Tucker. 1993. *Thinking for a Living: Education and the Wealth of Nations: Basic books*.
- Marzuki, P. T., Permadi, H., & Sunaryo, I. (2012). *Factors Affecting Job Satisfaction of Workers in Indonesian Construction Companies*. Journal of Civil Engineering and Management. Vol. 18, Issue 3, pp. 299 – 309
- MBAM Sokong Sistem IBS (2014). *Harian Metro Online*. Retrieved November 27, 2015 from <http://www.hmetro.com.my/node/2516?m=1>
- McCulloch, A. (2013). *Learning from Futuretrack: The Impact of Work Experiences on Higher Education Students Outcomes*. Research paper number 143, Department for Business Innovations & Skills, London.
- Md. Yusof, M. A., (2015), *Wajib Guna IBS Tahun Depan*. *Utusan Online*. Retrieved November 3, 2015 from <http://www.utusan.com.my/berita/nasional/wajib-guna-ibs-tahun-depan-1.145682>
- Memartabatkan Pembangunan Belia Berkemahiran Untuk Mengisi Keperluan Tenaga Mahir Negara Dalam Bajet 2014 (2015). Retrieved on December 18, 2015 from <http://www.youthcharacter.net/2013/07/mbmperjuanganbeliaberkemahiranda n.html>
- Migration News (1995), *Malaysia Issues Guidelines on Foreign Labours*, Migration Dialogue, December 1995, Volume 2, Number 12
- Ministry of Home Affairs (2014). *Kenyataan Media Kawalan Pekerja Asing Di Malaysia*. Putrajaya: Ministry of Home Affairs.
- Ministry of Human Resources of Malaysia (2013) *Immigration in Malaysia: Assessment of its Economic Effects, and a Review of the Policy and System*
- Mobley, C. D. (1998) *North Carolina employers' perceptions of essential skills for entry-level employment of high schools graduates: Implications for educational leadership*. (PhD dissertation). East Carolina University.
- Mohamad H. F. & Mohd Satar N. F. (2016, May 1) *Enam Tindakan Lahir Pekerja Berkemahiran*. *Berita Harian*.

- Mohamed, A, Mohd Isa, F. L., & Shafii H. (2007). *Kemahiran di Kalangan Graduan Sebagai Kriteria Penting Pasaran Tenaga Kerja: Kajian Kes Graduan Fakulti Kejuruteraan, UKM*. Seminar Pendidikan Kejuruteraan dan Alam Bina 2007.
- Mohd Rahim, F. A., Mohd Yusoff, N. S., Wang, C., Zainon, N., Yusoff, S. & Deraman, R. (2016). The challenge of labour shortage for sustainable construction. *Planning Malaysia: Journal of the Malaysian Institute of Planner* (Special Issue V), pp. 77 – 88.
- Mohd Yusof, Z. (2004). *Pendidikan Vokasional dan Latihan Dalam Melahirkan Tenaga Kerja Tempatan Dalam Indusri Pembinaan*, GREduc Conference 2004, Universiti Putra Malaysia 11 September 2004.
- Mohd Yusof, Z. (2005). *Ke Arah Pengurangan Kebergantungan Tenaga Kerja Asing Di Sektor Binaan*, Jurnal Alam Bina, Jilid 7, No.2, 2005
- Morgeson, F. P., Reider, M. H., Campion, M. A., & Bull, R. A. (2008). *Review on Research on Age Discrimination in the Employment Interview*. Published online on January 14, 2008. Springer Science+Business Media, LLC 2008. <http://doi.org/10.1007/s10869-008-9066-0>
- Muhson, A. (2001). *Teknik Analisis Kuantitatif*
- Muijs, D. (2011), *Doing Quantitative Research in Education with SPSS: Second Edition*, SAGE Publications, pp. 1
- Mullen, L. G., Thakur, R., & Hensel, K. (2007). *Illegal questioning: A study of marketing students' recent interview experiences during their career searches*. *Journal for the Advancement of Marketing Education*, Issue 10, pp: 27–39.
- Musa, Z., (2015). Move To Reduce Dependency on Labor. *The Star Online*. Retrieved December 16, 2015 from <http://www.thestar.com.my/metro/community/2015/10/08/move-to-reduce-dependency-on-labour-construction-companies-encouraged-to-use-prefabricated-component/>
- Mustafa Kamal E., Haron S.H., Md Ulang N., Baharum F., (2012) The Critical Review on the Malaysian Construction Industry. *Journal of Economics and Sustainable Development*.
- Nadaraj V., (2013). Malaysia's Skilled Labour Dilemma: Jobs Aplenty but Few Takers. *Asean Today*. Retrieved December 18, 2015 from

<http://www.aseantoday.com/2013/06/malaysias-skilled-labour-dilemma-jobs-aplenty-but-few-takers/>

- Nadler, J. T. & Kufahl, K. M. (2014). *Marital Status, Gender, and Sexual Orientation: Implications for Employment Hiring Decisions*. Psychology of Sexual Orientation and Gender Diversity, American Psychological Association. Vol. 1, No. 3, pp: 270 –278, <http://dx.doi.org/10.1037/sgd0000050>
- Nadler, J. T., & Stockdale, M. S. (2012). *Workplace gender bias: Not between just strangers*. North American Journal of Psychology, Issue 14, pp: 281–292.
- Ofilu, U. M. (2004). *Compensation System in Nigerian Construction Firm: Piccolo-Brunelli Engineering Ltd*. St. Clements University.
- Ogunlana, S. O. & Wei P. C., (1998) *Worker motivation on selected construction sites in Bangkok, Thailand*, Engineering, Construction and Architectural Management, Vol. 5 Iss: 1, pp.61 – 81
- Ostwald, M. J. & Williams, A. (2008). *Understanding architectural education in Australia (Vol 1 & 2)*. Sydney: Australian Learning and Teaching Council. ISBN 978-0-9805545-0-2.
- Pallant, J. (2011). *SPSS Survival manual: A step by step guide to data analysis using SPSS for windows (version 10)*. 4<sup>th</sup> edition. McGraw Hill: Open University Press
- Pemaju Perumahan Mungkin Diwajibkan Guna IBS (2015). *Utusan Online*. Retrieved November 30, 2015 from <http://www.utusan.com.my/berita/nasional/pemaju-perumahan-mungkin-diwajibkan-guna-ibs-1.156797>
- Pertingkat Bakat Mahir Untuk Capai Negara Berpendapatan Tinggi – TPM (2012). *Utusan Malaysia*. Dalam Negeri.
- Pollitt, D. (2010). *Construction companies build skills for the future*. Training & Management Development Methods 24 (1): pp. 515-518.
- Quarterly Construction Statistics, Third Quarter 2016, Department Of Statistics, Malaysia, 10 November 2016 retrieved on 2 December 2016 from <https://www.statistics.gov.my/>
- Rajanna, K. A. (2015). *Socio-Economic Status of Women Workers in Construction Industry: A Case Study*. International Journal in Management and Social Science, Volume 3, Issue 3, pp: 287 - 299.

- Rajasekar, S., Philominathan, P. & Chinnathambi, V., (2013), *Research Methodology*.
- Razali Z.E., (2015). Syarikat Pembinaan Perlu Latih Lebih Ramai Pekerja Tempatan - CIDB. *Bernama*. Retrieved November 18, 2015 from <http://www.bernama.com/bernama/v8/bm/bu/newsbusiness.php?id=1162229>
- Reiche, S. (2007). *The effect of international staffing practices on subsidiary staff retention in multinational corporations*. The International Journal of Human Resource Management, 18(4), pp. 523-536.
- Rosli F.A., Penjara Padat Dengan Warga Asing (2015). *Kosmo! Online*. Retrieved October 28, 2015 from [http://www.kosmo.com.my/kosmo/content.asp?y=2015&dt=1014&pub=Kosmo&sec=Negara&pg=ne\\_06.htm](http://www.kosmo.com.my/kosmo/content.asp?y=2015&dt=1014&pub=Kosmo&sec=Negara&pg=ne_06.htm)
- Rusmin, R., (2015, March 16) Mahir Teknikal Namun Lemah Insaniah. *Harian Metro*.
- Saleh, S. (2008). *Causes of Poor Participation of Local Workers in Malaysia Construction Industry and Strategies for Improvement*. Universiti Teknologi Malaysia, November 2008
- Samuel, M., & Chipunza, C. (2009). *Employee retention and turnover: Using motivational variables as a panacea*. African Journal of Business, 3(8), 410415
- Sanders, J. & A. De Grip (2004). *Training, Task Flexibility and Low-Skilled Worker's Employability*, International Journal of Manpower
- Sekaran, U. & Bougie, R. J., (2000), *Research Methods for Business: A Skill-Building Approach*. Published by John Willey & Sons, New York.
- Shakil Hameed, N.S. (2016, Mei 2) Pekerja Berkemahiran Penggerak Ekonomi, *Utusan Online*
- Short, K. M., Pearce, A. R., Fiori, C. M., Bulbul, T., & McCoy, A. (2014). *The Influence of Internship Participation on Construction Industry Hiring Professionals When selecting New Hires and Determining Starting Salaries for Construction Engineering Graduates*. 121<sup>st</sup> ASEE Annual Conference & Exposition, American Society for Engineering Education.
- Sierpińska, M. & Kustra, A. (2008). *Bonus systems in mining industry: Current situation and future developments*. Department of Economics and



- Management in Industry, AGH University of Science and Technology, Kraków, Poland.
- Sinar Harian, (2016, Julai 25), *Malaysia Perlu 40 Peratus Pekerja Kemahiran Tinggi*
- Sooi C.C. (2007). *Skills Drain Digs into Building Sector*. Malaysian Business Journal. June 1.
- Stewart, J., & Knowles, V., (2000). *Graduate recruitment and selection practices in small businesses*. Career Development International Journal, 5(1), pp. 21-38.
- Tan, S. L., (2015). Negara Masih Kekurangan Tenaga Mahir – Nor Mohamed Yakcop. *Berita Astro Awani*. Retrieved on December 15, 2015 from <http://www.astroawani.com/berita-bisnes/negara-masih-kekurangan-tenaga-mahir-nor-mohamed-yakcop-77394>
- Tavakol, M. & Dennick R. (2011). *Making Sense of Conbach's Alpha*. International Journal of Medical Education 53-55, ISSN: 2042 – 6372
- Tayeb, M. (1997). *Islamic revival in Asia and human resource management*. Employee Relations 19(4), 352-364.
- Taylor, M and K Evans. 2009. *Formal and informal training for workers with low literacy: Building an international dialogue between Canada and the United Kingdom*. Journal of Adult and Continuing Education 15 (1): pp. 37-54
- The Conference Board of Canada (2002). *Solving the Skilled Trades Shortage: A feasibility report examining the barriers and solutions to youth participation in the skilled trades in Canada and proposing the development of pilot projects*. Research submitted to Human Resources Development Canada.
- Tunizar, A. & Termizi, A. (2014). Kaedah IBS Jimat, Cepat dan Berkualiti. *Utusan Online*. Retrieved November 27, 2015 from <http://www.utusan.com.my/sains-teknologi/teknologi/kaedah-ibs-jimat-cepat-dan-berkualiti-1.28239>
- Vilnius (2008). *Study of the construction sector: Research report on skill needs*. Methodological Centre for Vocational Education and Training.
- Wai, K. C., & Sui, P. L. (2005). Assessment of defects at construction and occupancy stages, Journal of Performance of Constructed Facilities, 19(4), pp. 283-289.
- Walker, I. & Zhu, Y. (2013). *The Impact of University Degrees on the Lifecycle of Earnings: Some Further Analysis*. Research Paper No. 112, Department for Business Innovation & Skills, London.

- Wilson, M., Parker, P. & Kan, J. (2007). *Age biases in employment: Impact of talent shortages and age on hiring*. The University of Auckland, New Zealand. Business Review, Volume 9, No. 1.
- Windapo, A. O. (2016). *Skilled labour supply in the South African construction industry: The nexus between certification, quality of work output and shortages*. SA Journal of Human Resource Management, 14(1), doi: 10.4102/sajhrm.v14i1.750
- Wosnitza, G. (2011). *Travel expenses: Construction Industry Employees*. Raymond Chabot Grant Thornton Tax Partner.
- Wright, C. (2015). *Asia's talent gap: Salary and recruiting insights to bridge the divide*. The 2015 HAYS Asia Salary Guide.
- Wye, C. K. & Ismail, R. (2012). *Labour Market Structure in Malaysia: Pre- and Post- Market Gender Comparison*. International Journal of Academic Research in Business and Social Sciences October 2012, Vol. 2, No. 10, pp. 259 – 284. ISSN: 2222-6990
- Ye, L., Gindling T. H., & Li, S. (2015). Compliance with legal minimum wages and overtime pay regulations in China. IZA Journal of Labor & Development, 2015, Volume 4, Number 1, Page 1
- Ye, L., Gindling, T. H. & Li, S. (2015). Compliance with legal minimum wages and overtime pay regulations in China. IZA Journal of Labor & Development. doi: 10.1186/s4017501500382
- Yean, F., & Poh, Y. P. (2004). Encouraging More Female Quantity Surveying Graduates to Enter the Construction Industry in Singapore. Women In Management Review, 19(8), 431–436. doi:10.1108/09649420410570234
- Yeomans, L. (2011). *An update of the literature on age and employment*. Health and Safety Executive. Crown. First published 2011.
- Yet-Mee, L. (2013). A Study on Women's Career Advancement in Malaysia. Journal of Human and Social Science Research, 2(1), 21–34.
- Zikmund, W. G. (2003). *Research Methods: Basic Data Analysis (Descriptive Statistics)*

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